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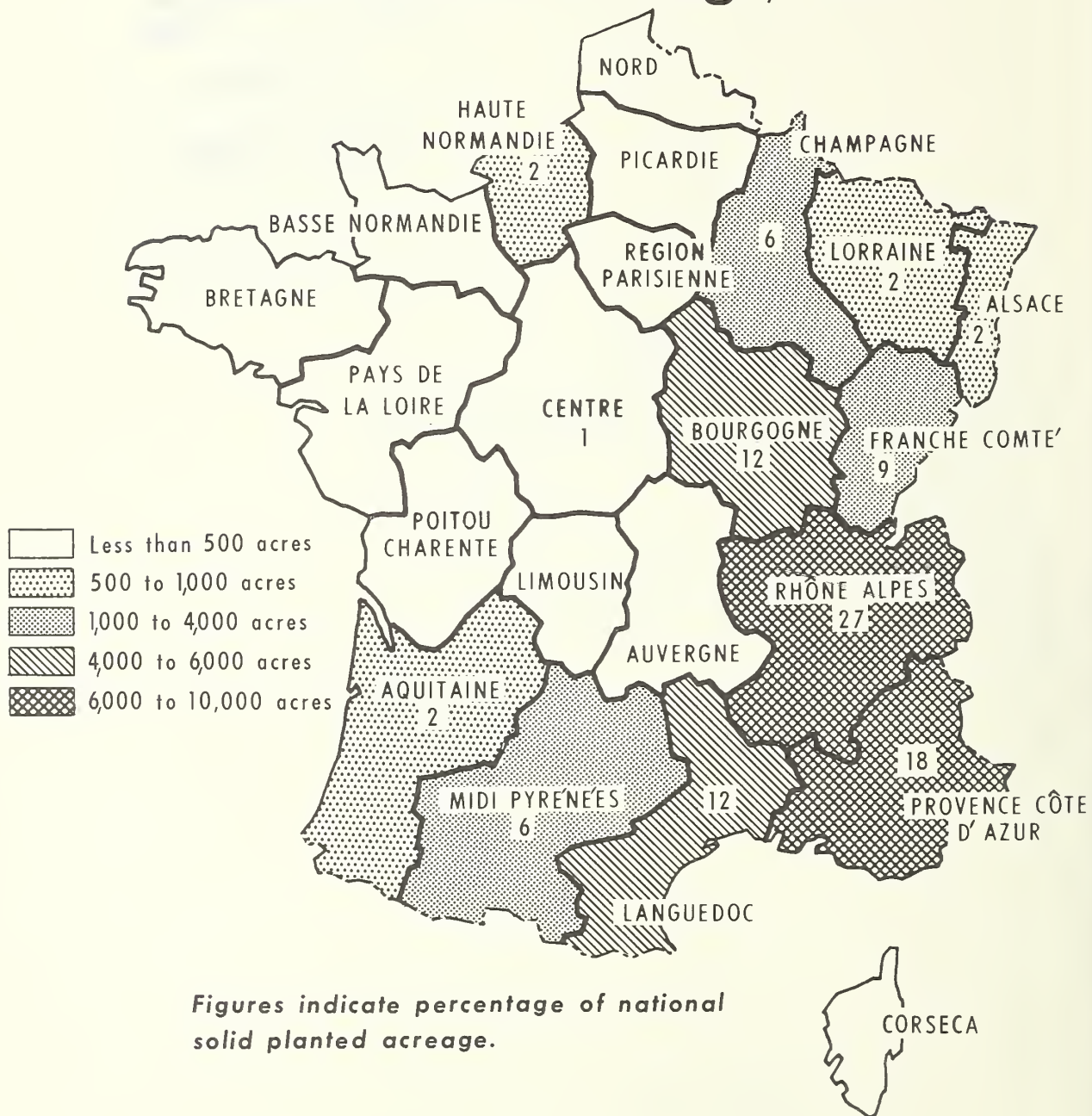
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**CHERRY
PRODUCTION
IN
FRANCE**

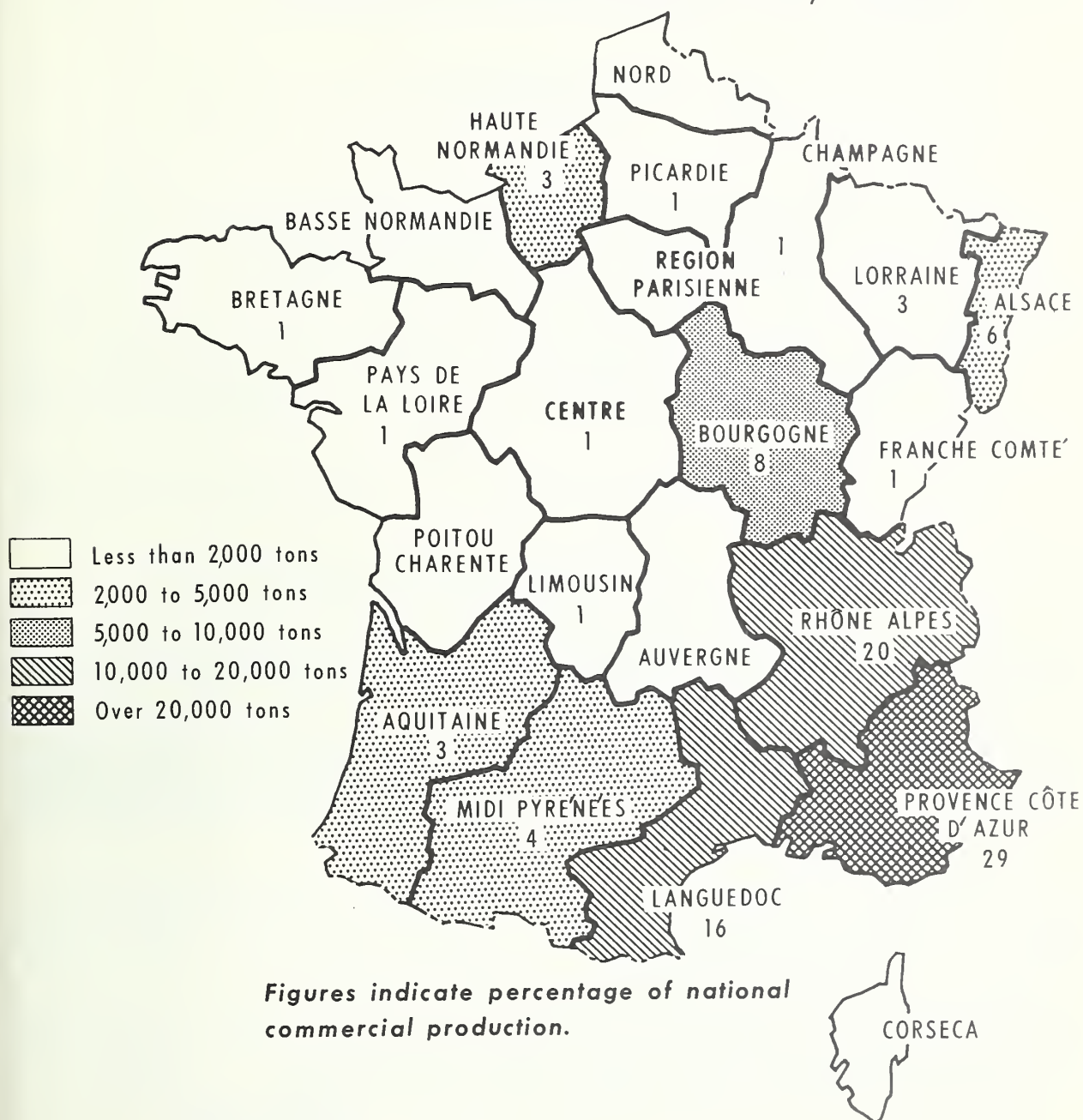


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FRANCE: Cherry Trees, Solid-Planted Acreage, 1961



FRANCE: Commercial Production of Cherries, 1961



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FOREWORD

France is the world's leading country in the export of glace cherries. French exports have been increasing and there are indications that further expansion may take place.

This survey was undertaken in order to develop information on the present and prospective situation in France with respect to the production and marketing of processed cherries. It is hoped that the information presented in this report will provide some insight on the French glace cherry industry and be of some assistance in evaluating its potential.

The author is indebted to Dudley G. Williams, Assistant Agricultural Attaché, American Embassy, Paris, for his assistance in obtaining pertinent data and in visiting production areas.

Also, the friendly cooperation of French Government officials, agricultural specialists, and fruit growers is greatly appreciated. Last, but not least, French processors and fruit handlers were most helpful in freely discussing both their own operations and industry-wide developments and problems.

J. W. Stewart.

J. W. Stewart, Director
Fruit and Vegetable Division

CHERRY PRODUCTION IN FRANCE

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I. FRESH FRUIT

Introduction

France is one of the major cherry-producing countries of the world, for the last few years ranking fourth or fifth among the nations for which statistics are available. Only the United States, West Germany, and Italy surpass France regularly; Yugoslavia, sometimes. French production has averaged nearly 104,200 short tons in the 5 years, 1959-63. Although this total is considerably less than average U.S. production of almost 220,500 tons, French cherry production per capita or per acre of farmland is considerably greater than that of the United States.

Acreage

In 1962, France had 36,400 acres of cherry trees grown as "culture pures," i.e., solid-planted stands not intermixed with other trees or woody plants such as vines or bushes according to the French agricultural census. In addition, there were 36,800 acres of cherry trees that were "associées ou isolées", i.e., either intermixed or else isolated trees, the latter a tree here and there in the midst of a field crop or scattered along the roadside. The census also showed that cherry trees are grown in every one of France's 21 regions, though very few are found in the northernmost region, Nord, a highly industrialized area in which the cities of Dunkerque and Lille are located. The 1962 figures represent a slight increase over the 1961 figures of around 35,700 acres solid-planted and 36,500 acres of intermixed isolated trees.

The combined area--of solid-planted trees and intermixed or scattered trees--totaled 73,200 in 1962 and about 72,200 in 1961. Though the solid-planted portion actually accounted for slightly less than half the acreage, the present study will concentrate on this portion for several reasons. Most important, a large proportion of the solid-planted acreage produces fruit for market, designated "commercial" by the French Government, which estimates for each departement (comparable to a county in the United States), the proportion marketed. For France, as a whole, 73 percent of the 1960 crop, 72 percent of the 1961 crop, and 74 percent of the 1962 crop was classified "commercial". The remainder represents farm or local consumption.

The 1961 census showed that departements in which over 50 percent of the production was considered commercial contained 93 percent of total solid-planted acreage (33,404 acres); departements where 50 percent or less of the production was "commercial" therefore contained but 7 percent of the solid-planted acreage. On the other hand, the latter departments had 42 percent of the intermixed isolated plantings. (Latest detailed data available were from the 1961 census.)

Table 1.--FRANCE: Area in cherry trees, by region, and type of planting, 1961

Region	Solid planted		Intermixed or isolated	
	<u>Acres</u>	<u>Percent</u>	<u>Acres</u>	<u>Percent</u>
Nord.....	(¹)	(¹)	(¹)	(¹)
Picardie.....	25	---	568	1
Region Parisienne.....	22	---	450	1
Centre.....	151	1	655	2
Haute-Normandie.....	667	2	--	--
Basse-Normandie.....	25	--	--	--
Bretagne.....	--	--	1,903	5
Pays de la Loire.....	123	1	988	3
Poitou-Charentes.....	17	--	709	2
Limousin.....	62	--	643	2
Aquitaine.....	736	2	3,931	11
Midi-Pyrénées.....	2,051	6	2,422	7
Champagne.....	2,224	6	1,359	4
Lorraine.....	692	2	4,250	12
Alsace.....	791	2	4,003	11
Franche-Comté.....	3,239	9	2,298	6
Bourgogne.....	4,275	12	1,754	5
Auvergne.....	94	--	57	--
Rhone-Alpes.....	9,763	27	2,627	7
Languedoc.....	4,327	12	2,718	7
Provence-Cote-D'Azur-Corse.....	6,449	18	5,115	14
Total.....	35,733	100	36,450	100

¹ Not reported, but of minor magnitude.

Source: Statistique Agricole 1961. Ministère de l'Agriculture, France.

Although a significant proportion of the crop from intermixed or isolated trees goes into commercial channels, there is no question but that this is a constantly decreasing proportion. As agriculture modernizes in France--a process already in full swing--more and more of the new plantings are orchards which can be efficiently handled by up-to-date methods. On the other hand, attrition--process of trees dying or being pulled out, and not replaced should be increasingly heavy among intermixed or scattered plantings. As time goes on, therefore, an even smaller percentage of France's cherry production will come from such noneconomic plantings.

Location and Climate

Cherry acreage (as the solid-planted acreage will henceforth be referred to) is concentrated heavily in eastern and southern France, and most especially in southeastern France. The Region Rhone-Alpes is most important in acreage (9,763 acres), the Region of Provence-Cote d'Azur-Corse (Corsica)

Contrast in types of planting for cherry trees near Apt, center of France's glacé processing industry.



Cherry trees interplanted with grape vines represents intermixed planting.



This young cherry orchard typifies a solid planting, the most common source of commercial cherries, increasing with farm modernization.



Modern Orchard, left, contrasts sharply with isolated tree planting,

next with 6,449 acres. In this latter region, Corsica is of no significance, since practically all the region's cherry acreage is in Provence and Cote d'Azur. Three other important regions are Languedoc, Bourgogne, and Franche-Comté. Cherry acreage is strikingly light in northern and western France.

It appears that future cherry plantings will be even more heavily concentrated in southeastern France. There a dynamic expansion of fruit-growing is taking place, particularly in the Mediterranean region and lower Rhone Valley; the change reflects development of irrigation projects and heavy investments in creation of orchards and auxiliary facilities. French fruit experts regard this as the most favorable section of the country for fruit culture because of well-suited soils, abundant sunshine, and relative freedom from excessive rain during the harvest season.

A comparison of average monthly rainfall,¹ for example, for three different regions of the country is as follows:

Month	North (and Paris)	Center	Mediterranean
	<u>Inches</u>	<u>Inches</u>	<u>Inches</u>
January	1.9	2.6	1.2
February	2.0	2.4	2.1
March	1.3	2.0	3.4
April	1.3	1.9	2.6
May	1.7	2.5	1.5
June	2.4	3.2	1.8
July	2.3	2.6	1.1
August	2.6	3.0	1.6
September	2.2	3.2	4.0
October	1.9	2.0	2.8
November	1.4	1.9	3.4
December	<u>2.1</u>	<u>3.2</u>	<u>4.0</u>
Annual	23.1	30.5	29.5

This limited tabulation, though not intended to show the rainfall pattern for all of France, gives some indication of the seasonal distribution in three different regions. It is apparent that rainfall during the cherry harvest season--approximately May to July in the southeast is lightest in the Mediterranean region--3.3 inches for May and June, as against 5.7 inches for the same months in the center region, and 4.1 inches in the north. Rainfall in locations nearer the Alps in eastern France, or the Atlantic Ocean in western France, is heavier than rainfall in the three regions of the tabulation.

¹ Source: Resume mensuel du Temps en France, Direction de la Meteorologie national.

Another weather factor -- days without frost -- of significance to cherry culture, is particularly favorable in the Mediterranean area. Average number of days with a minimum temperature of 32° Fahrenheit or less in three regions of France was as follows:

Month	North (Reims)	Center (Avord)	Mediterranean (Nimes)
	<u>No. of days</u>	<u>No. of days</u>	<u>No. of days</u>
January.....	14	13	8
February.....	16	15	7
March.....	16	10	2
April.....	7	4	(¹)
May.....	1	(¹)	0
June.....	(¹)	0	0
July.....	0	0	0
August.....	0	0	0
September.....	(¹)	(¹)	0
October.....	4	2	(¹)
November.....	7	6	2
December.....	14	12	7
Annual.....	79	63	27

¹ Less than 1/2 day.

Nimes, virtually in the heart of France's cherry-producing center, obviously has a long frost-free season.

In terms of sunshine, also the Mediterranean region is favored. According to the French Meteorological Service, Reims (in the north) has an average of 45 days of fog annually, Avord (in central France) 46, Nimes only 13. Paris and Bordeaux average 71 and 80 days of fog, respectively.

Production

French production of cherries has been moving upward but the increase has been much smaller than for most other tree fruits:

	Average 1949-53	Average 1959-63	Increase (+) or decrease (-)
	<u>Short tons</u>	<u>Short tons</u>	<u>Percent</u>
Apples, table.....	457,176	801,312	+75
Pears, table.....	164,225	288,150	+75
Peaches.....	149,107	365,784	+145
Apricots.....	43,411	81,076	+87
Cherries.....	87,799	104,188	+19
Plums, prunes.....	143,487	139,496	-3

Table 2.--FRANCE: Production of cherries, averages 1949-53, 1954-58 and 1959-63, annual 1949-63

Year	Production	Year	Production
	<u>Short tons</u>		<u>Short tons</u>
Average:		Annual:	
1949-53.....	87,799	1955.....	91,601
1954-58.....	82,904	1956.....	87,710
1959-63.....	104,188	1957.....	74,956
Annual:		1958.....	69,037
1949.....	82,733	1959.....	89,286
1959.....	83,412	1960.....	101,412
1951.....	80,159	1961.....	101,742
1952.....	99,659	1962.....	109,300
1953.....	93,034	1963.....	119,200
1954.....	91,215		

Source: Ministère de l' Agriculture, France.

In the 11 years, 1949 through 1959, French cherry production ranged between about 69,000 and 99,500 tons. However, in each of the last 4 years, production has exceeded 100,000 tons.

Producing Areas

It is not possible to report usable production figures for individual areas over a period of years. Before 1961, French agricultural statistics were seriously inadequate for reliable and detailed information on crop acreage, yield, and production. Traditionally much of the information was obtained through such means as communal registers, registrations of land area and changes in holdings, and through "agricultural correspondents" (crop reporters of various occupations). Beginning in 1957, however, these means have been progressively replaced by new methods such as sampling surveys and farm-enterprise record books. Beginning in 1961, French agricultural statistics were drastically revised and are now, in certain respects, no longer comparable with previous data, according to the Ministry of Agriculture. In this report, therefore, only the 1961 statistics (also the latest available with regional and county breakdowns of acreage and production) are used for individual areas. There is every reason to believe that in future years much greater use of French agricultural statistics will be practicable.

As stated earlier, commercial cherry production is heavily concentrated in southeastern France. The leading region, by a wide margin, is Provence-Cote d' Azur with about 21,500 tons in 1961, representing 29 percent of the national total. Also very important are Rhone-Alpes and Languedoc. Bourgogne, though a poor fourth, is still well ahead of the remaining regions. These four together accounted for 73 percent of France's commercial cherry crop.

Table 3.--FRANCE: Production of cherries by region, total and commercial

Region	Total		Commercial		Commercial
	<u>Short tons</u>	<u>Percent</u>	<u>Short tons</u>	<u>Percent</u>	<u>Percent of region's total</u>
Nord.....	661	0.7	331	0.5	50
Picardie.....	1,268	1.2	551	.7	43
Region Parisienne...	1,731	1.7	66	.1	4
Centre.....	2,183	2.1	716	1.0	32
Haute-Normandie.....	2,249	2.2	2,028	2.8	90
Basse-Normandie.....	265	.3	44	.1	18
Bretagne.....	2,568	2.5	463	.6	18
Pays de la Loire....	1,609	1.6	650	.9	40
Poitou-Charentes....	2,028	2.0	88	.1	4
Limousin.....	1,995	2.0	1,014	1.4	51
Aquitaine.....	2,447	2.4	2,061	2.8	84
Midi-Pyrénées.....	4,762	4.7	3,252	4.4	68
Champagne.....	1,885	1.8	1,102	1.4	58
Lorraine.....	5,236	5.1	1,929	2.6	36
Alsace.....	6,614	6.5	4,189	5.7	63
Franche-Comté.....	2,205	2.2	1,047	1.4	47
Bourgogne.....	7,650	7.5	6,217	8.5	81
Auvergne.....	507	.5	176	.2	34
Rhone-Alpes.....	17,008	16.7	14,639	19.9	86
Languedoc.....	12,842	12.6	11,464	15.6	89
Provence-Cote- D'Azur-Corse.....	24,251	23.7	21,484	29.3	88
Total.....	¹ 101,964	100	73,511	100	72

¹ Preliminary total; since, revised slightly.

Source: Statistique Agricole 1961. Ministère de l'Agriculture, France.

Greatest concentration of commercial production occurs where the three leading regions meet. Here are found a few departments (i.e., counties) with far the heaviest production in France. These include Vaucluse in the western panhandle of Provence (by a wide margin the leading cherry-producing county, and the one in which the cherry-brining and glacé-processing industries are located) which produced 11,100 tons in 1961. The others are Bouches-du-Rhone ("mouths of the Rhone") on the southern boundary of Vaucluse, second most important county for cherries (7,200 tons); Gard, on the west of Vaucluse and Bouches-du-Rhone (4,200 tons); Ardeche on the north of Gard (6,000 tons); and Drome, the county immediately north of Vaucluse (3,900 tons). Here a solid block of 5 counties accounts for about 45 percent of France's commercial crop. The Rhone River flows virtually through the middle of this area, which embraces the districts designated by French agriculturists as the Lower Valley of the Rhone; Provence; and the Middle Valley of the Rhone.

In these five counties are 6,900 acres of solid-planted cherry trees and 2,500 acres of isolated or intermixed.

Culture

The French extension service (Services Agricoles) considers cherry trees adapted to most soils, but it particularly recommends light gravelly soils that are deep, cool, well-aerated, and not too calcareous. Maximum development of the tree will depend on the fertility of the soil, the service emphasizes. (Trees attain considerable size in the valley soils of the southeast region.) Growers are told to avoid clayey soils or those that are excessively moist.

Since the flooding of the Rhone River and its lower tributaries in the fall of 1960, French farmers and agricultural technicians have become particularly aware that well-drained locations are necessary for cherry raising. A considerable number of cherry trees perished in the wake of this flooding, not so much from being washed out or toppled over as from asphyxiation because the soil was submerged for many days. As a matter of fact, some cherry orchards not inundated also suffered severe damage from water-logged soil because of inadequate drainage during this period of unusually heavy rainfall.

As earlier mentioned, there is a trend away from planting cherries as part of a permanent mixture of trees and vines. However, since there is much space between newly planted cherry trees, and since they grow rather slowly the first few years, the French farmers attempt to use the ground between rows with temporary crops. In southeast France, depending on the soil, various types of intercrops may be grown, such as grapes, prunes, apricots or peaches, and where the soil is very rich, vegetables.

Spacing between trees depends on the rootstock and on the fertility of the soil. In southeast France, recommended distances on very good soils are 10 x 12 meters (33 x 39 feet) to 15 x 15 meters (49 x 49 feet) and, on other soils, 8 x 8 meters (26 x 26 feet) to 10 x 12 meters. In round figures, an area of 1,300 to 1,600 square feet per tree on very good soils (27 to 33 trees per acre) and 850 square feet on other soils (51 trees per acre) are recommended. The latter is the more similar of the two to the spacing used in the United States. Only within the last few years has systematic, rather than haphazard, spacing of trees become common.

The choice of rootstocks is also a factor in the spacing. Merisier (known as Mazzard in this country) is considered more desirable for the richer soils and for "cool" soils well-endowed with organic matter. In such soils it produces a large, vigorous, long-lived tree, but it is late in coming into production. Trees of this rootstock, 150 years old, are found near Remoulins. The Sainte-Lucie rootstock, also known as Mahaleb in France as well as in the United States, is commonly used on the poorer, drier, more calcareous soils. The Services Agricole considers trees grafted on Mahaleb to be quite short-lived, i.e. generally not living more than 15 or 20 years. However, the trees on Mahaleb rootstock yield fruit at an earlier age, also, according to the Services, the fruits are often larger, sweeter, and 5 to 10 days earlier than those from trees on Merisier rootstock. Approximately two-thirds of

the cherry trees, covering about three-fourths of cherry acreage in the southeast, are on Merisier stock, a survey of nurseries by the Ministry of Agriculture showed.

Many varieties of cherries are grown in France. France, like the United States, grows the three main kinds of cherries: sweet, sour, and Duke (the last is a hybrid of sweet and sour cherries, and possessing characteristics of each). There are no available statistics showing the acreage or production of each kind, but it appears that sweet cherries are far the most important. Furthermore, plantings in recent years have been made mainly of sweet cherries. Though some interest has been expressed in developing sour cherry production and canning there is no evidence of much planting.

The French differentiate their sweet cherry varieties into two main classes: Bigarreau and Guigne. The fruits of the Bigarreau varieties are relatively large; yellow, red, or black in color, often bicolored; heart-shaped; with a firm, crisp flesh. The Guignes are soft-fleshed and juicy, with juice and flesh the same color at maturity and highly colored. The Bigarreau type is dominant, particularly in the southeast. The Bigarreau varieties are used for the fresh market, for canning, for confectionery, and for freezing. Of them, the Napoleon (Royal Anne) is the most popular and is grown in many departements but is especially dominant in the Vaucluse and Gard departments where the cherry-processing industry is centered. French growers consider it a proven variety in this Rhone-Valley area and it is highly regarded as a processing variety. The Napoleon's light color (light yellow and pink blush), large size, firm flesh, and relative resistance to cracking during wet seasons, all contribute to its desirability for processing into a confectionery-type product, such as glacé cherries. It is late-maturing -- the average date of maturity is about June 1 in the Gard-Vaucluse area, while for other varieties harvesting begins as early as May 5. There is, of course, variation from season to season in time of maturity. Only Napoleons are made into glace cherries, according to members of the French processing industry. The other principal varieties and average date of maturity of each in this region are: Hative de Bale, May 5; Bigarreau Jaboulay, May 10; Bigarreau Moreau, May 12; Bigarreau Burlat, May 15; Bigarreau de Juin, May 20; and Bigarreau Reverchon, May 25.

The French Government authorizes the commercial propagation of only those varieties that it considers of sufficient merit. The government is carrying out trials with many varieties, foreign and French, before classifying them as to desirability. The Napoleon qualifies, not as a table variety (Class I), but as a variety possessing special characteristics, i.e. industrial use.

Pruning, a highly developed art in French fruit culture, is not intensively practiced with cherries. In the commercial area, the usual practice is to top the trees every 3 or 4 years and to lop off some limbs from time to time. There are also orchards, in this area and elsewhere, in which not even this amount of pruning is practiced. The result is large trees with heavy yields; but fruit size remains small and harvesting is made difficult by having to move 25-foot ladders, in addition to having to pick fruit from the ladder tops. Spraying large trees is also very difficult. A height of 35 to 55 feet is not uncommon for such trees, while those which receive some pruning average 25 to 30 feet.

The Services Agricoles suggests that not much pruning is necessary after that required to train the trees while young. It recommends only that dead, diseased, or damaged wood should be cut out, and that when the trees become rather large they should be topped, to limit difficulty in harvesting or spraying.

Some growers have experimented with a system of severe pruning in order to obtain cherry trees of "petite forme", i.e. trees no taller than 2-1/2 meters (8 feet, 2 inches). The main purpose of this method is to obtain larger fruit; apparently this can be achieved. It is reported that the individual fruits of the Napoleon variety are 15 percent heavier when the trees are trained small. Size has an important bearing on the time required to complete the harvest and labor costs of harvesting. Thus, during the 1960 harvest, while it took 15 minutes to fill and empty a panier containing 3 kilograms (6.6 pounds) of cherries picked from large trees, it required only 9-1/2 minutes for the same operation in the case of small trees. In terms of a day's work, this meant 310 pounds harvested per person from small trees as against 200 pounds from large trees. Not only does the work take less time, but it is also less strenuous. In addition, use of stools or small ladders makes it possible for women or young persons to harvest, making it easier to find harvest help. Also, spraying is facilitated. However, there is a major drawback: the yield of these small trees is only half that of large trees. French technicians hope that the ideal solution will be found some day through development of a suitable rootstock which will impart dwarfness without sacrificing yields.

Fertilization and cultivation are not intensive. About two shallow cultivations a year--one in spring and one in fall--are considered adequate. Some growers follow the extension specialists' recommendation that the subsoil be enriched with phosphate and potash when the trees are planted. Specialists further recommend application of 360 pounds of superphosphate and 180 pounds of potassium chloride per acre every autumn. They also suggest that organic fertilizer be applied every three years. However, it appears that not many growers apply much fertilizer to cherry trees, and some of the fluctuations in yields--on the low side--are attributed to inadequate fertility.

Irrigation is not much practiced in French cherry culture, though it is a fairly widespread practice in raising other fruits such as apples and prunes. There is agreement, though, that irrigation would help stabilize cherry yields.

Diseases and insects also create problems for the French cherry grower. Unless trees are sprayed regularly, serious damage can be caused by diseases such as Monilia (brown rot), Gnomonia (leaf spot), and Coryneum (blight), and recently Cocomyces (known here as leaf spot or shot-hole disease but termed anthracnose in France). Bordeaux mixture has been generally used to combat all these.

Among insect pests affecting cherries in France is a fruit fly, *Rhagoletis Cerasi*, called cherry fly in France (*Mouche de la Cerise*). The cherry fly probably has greater economic significance than any others. It lays its eggs on cherries in late May. These hatch into larvae, commonly described as worms or maggots, which bore into the interior of the fruit. Many other countries have restrictions against importation of worm-infested cherries which, at times, have resulted in costly rejections of French fruit. These

include the all-important export outlets for French glace cherries, the United Kingdom and the United States. A number of cherry varieties mature before the fly lays its eggs; but the Napoleon and other late-fruited varieties are vulnerable.

In order to protect its export markets from this hazard, France does not permit exportation of cherries unless they have been certified by the Service de Protection des Vegetaux as free of worms and even of punctures made by the fly.

At first, the Protection Service granted certificates rather freely for early varieties because they were unlikely to carry any eggs or larvae. However, some importing countries, in recent years, have also added the requirements that the cherries be free even of skin pricks caused by the fly's feeding.

For late cherry varieties, the certificate permitting export will be granted only for fruit coming from areas where trees have been treated for cherry fly, and providing the "sanitary state" of the fruit has been verified as "perfect" by a sampling made before shipment. A sample of 25 to 50 cherries is crushed and placed in a salt water solution, of 250 grams of household salt dissolved in a liter of water. If the fruits are contaminated, the larvae will come to the surface in a few minutes.

Three types of insecticides have been used to combat *Rhagoletis* in orchards. The oldest is DDT or a similar chlorine chemical, both of which act by contact. In Vaucluse, these have been used since 1953. Though DDT is effective in destroying the cherry fly before she lays her eggs, it is ineffective against the eggs and larvae. The Services Agricoles recommends application of 1-1/8 to 1-1/3 pounds of active material per acre, 10 to 12 days after appearance of the first flies. This is usually at the time when the early varieties begin to mature. The DDT treatment, in killing the fly, also prevents many feeding punctures. A disadvantage is that rainy weather makes a second or even a third application necessary.

A mixture of parathion and oil, emulsified in water, is also utilized, with a single application, at a rate of 4 ounces of parathion ethyl per gallon of oil per acre, adequate. It is to be applied at least three weeks before the expected beginning date of harvest. The oil-parathion mixture has been effective at all stages of the insect's life cycle: adult, egg and larva. Also, it is stable through rainstorms. The main disadvantage of parathion is toxicity, which makes it less convenient to handle and also necessitates its being applied well in advance of harvest.

A third means of combatting the fly is use of dimethoate. This is effective against fruit fly, cherry fly, and olive fly. Its action against the cherry fly is essentially that of a larvacide. Because it is not very toxic, it can be sprayed on isolated trees growing in the midst of other crops or other cherry varieties. It should be applied 15 to 20 days before commencement of the harvest of the variety. Approximately 120 to 160 grams of active material per acre are recommended. The shortcoming of this means of control is that the fly can puncture the fruit skin while feeding and even lay, under the skin, eggs which can hatch into embryonic larvae.

These control measures, when seriously applied, are credited by the Services Agricoles with rapidly reducing the reproduction of Rhagoletis in an area.

Other insects that attack cherry trees include Cheimatobia (winter moth) whose larvae devour leaves, flowers, and buds; Agrilus (borer) which also damages apricot and pear trees; and aphids. The French have a rather complete arsenal of insecticides to combat these pests and others. Besides DDT, BHC, and parathion, they also employ malathion, diazinon, ethion, sevin, and other preparations. The French government, however, prohibits use of arsenical compounds on cherry trees from blooming to harvest. Use of BHC is also prohibited on fruits because of the disagreeable odor it imparts.

Yields

Only limited data on yields are available. For adult trees, grafted on Merisier, and planted widely spaced in the Gard River valley in the heart of the commercial cherry-growing region, average yields for 1956-60 were as follows:

	<u>Pounds</u>
Napoleon (Bigarreau).....	375
Reverchon (Bigarreau).....	310
Jaboulay (Bigarreau).....	290
Hative de Bale.....	270
Bigarreau de Juin.....	205
Moreau (Bigarreau).....	185

According to M. l'Ingénieur J.-P. Negre of the Services Agricoles, who has developed much of this information on French cherry growing, some of these varietal yields are abnormally high or low. However, he emphasizes that this average for Napoleons reflects the high and consistent productivity of this variety.

On many farms, harvesting is carried out largely by family labor, but use is made also of gangs of temporary workers. The fruit is picked into small wicker baskets which hold 2 to 3 kilograms (4.4 to 6.6 pounds) and is then usually emptied into large wicker baskets which hold 30 to 35 kilograms (66 to 77 pounds) each. Alternatively, the small baskets may be emptied into standard trays. The fruit is transported to the packer or briner in these containers. Packers in turn repack the cherries into their own containers for further shipping. Culling and sizing is generally done at the farm, but packers maintain that there could be much improved culling-out of imperfect, "eaten", split, and punctured fruit at the orchard.

Average quantities picked per day per female worker are estimated as follows for various kinds of cherries:

	<u>Pounds</u>
Early varieties.....	65 to 90
Table Bigarreau varieties.....	110 to 130
Bigarreau for preserving.....	175 to 200

Prices and Returns

Prices, of course, vary by variety, year, area, and time of season. In 1963, for instance, on June 6 in the area Bouches-du-Rhone/Vaucluse, the varieties Burlat, Moreau, and Reverchon were quoted at 16.7 to 22.3 cents per pound, while Coeur de Pigeon was quoted at 13.9 to 23.2 cents and Napoleon at only 11.1 to 12.1 cents. Prices in 1963 were not very much different from 1962 if allowance is made for the later season in 1962. Thus, on June 12, 1962, the quotations in the same area were 16.7 to 23.2 cents for Burlat, 16.7 to 20.4 cents for Reverchon, 13.9 to 15.8 cents for Coeur de Pigeon, and 11.1 to 12.1 cents for Napoleons. Prices vary among areas, as exemplified by the May 30, 1962, prices for Burlat or Moreau, i.e., 20.4 to 26.0 cents in Area I, 13.9 to 19.5 cents in Area II, 16.7 to 21.3 cents in Area III, and 15.8 to 18.6 cents in Area IV.² That prices vary with the time of season can be shown, for instance, by the course of the market for Coeur de Pigeon in

Table 4.--FRANCE: Prices¹ received by growers for cherries delivered in bulk lots to local markets or assembly points selected dates, 1962

Variety	Market ²	May 30	June 5	June 12	June 19	June 26	July 3
		U.S. cents per pound	U.S. cents per pound	U.S. cents per pound	U.S. cents per pound	U.S. cents per pound	U.S. cents per pound
Bigarreau Jaboulay....	I	--	--	--	--	--	--
	II	--	12.1-15.8	--	--	--	--
	III	9.3-12.1	--	--	--	--	--
	IV	--	10.2-12.1	--	--	--	--
Bigarreau Moreau.....	I	20.4-26.0	20.4-23.2	23.2-26.0	--	--	--
	II	13.9-19.5	26.0-29.7	--	--	--	--
	III	16.7-21.3	--	--	--	--	--
	IV	15.8-18.6	19.5-21.3	15.8-18.6	11.1-12.1	--	--
Bigarreau Burlat.....	I	20.4-26.0	20.4-23.2	23.2-26.0	--	--	--
	II	13.9-19.5	18.6-20.4	16.7-23.2	16.7-18.6	--	--
	III	16.7-21.3	--	--	--	--	--
	IV	15.8-18.6	19.5-21.3	15.8-18.6	11.1-12.1	--	--
Bigarreau Reverchon...	I	--	--	--	--	--	--
	II	--	--	16.7-20.4	16.7-18.6	7.4-13.9	13.9-14.8
	III	--	--	--	20.4-23.2	9.3-10.2	--
	IV	--	--	--	12.1	9.3-10.2	10.2-13.0
Bigarreau Coeur de Pigeon.....	I	--	--	--	--	--	--
	II	--	--	13.9-15.8	13.0-13.9	9.3-11.6	12.1-15.8
	III	--	--	--	14.8-15.3	--	--
	IV	--	--	--	--	--	--
Bigarreau Napoleon....	I	--	--	--	--	--	--
	II	--	--	11.1-12.1	7.4-9.3	7.4-9.7	7.4-9.3
	III	--	--	--	9.3-10.2	7.4-9.3	--
	IV	--	--	--	--	--	--

¹ Converted to U.S. currency on basis of 1 New Franc = 20.405 cents.

² I, In Department Pyrénées-Orientales. II, In Departments Bouches-du-Rhone and Vaucluse. III, In Department Gard. IV, In Rhone Valley.

Source: Marchés Européens des Fruits et Légumes, Paris.

² Areas are identified in tables giving grower prices.

Table 5.--FRANCE: Prices¹ received by growers for cherries delivered in bulk lots to local markets or assembly points selected dates, 1963

Variety	Market ²	May 24	May 30	June 6	June 13	June 20	June 27	July 4
		U.S. cents per pound	U.S. cents per pound	U.S. cents per pound	U.S. cents per pound	U.S. cents per pound	U.S. cents per pound	U.S. cents per pound
Bigarreau Jaboulay.....	I	--	--	--	--	--	--	--
	II	10.2-13.9	--	--	--	--	--	--
	III	--	--	--	--	--	--	--
	IV	--	10.2-11.1	--	--	--	--	--
Bigarreau Moreau.....	I	18.6-22.3	16.7-19.5	--	--	--	--	--
	II	13.0-22.3	9.3-19.5	16.7-22.3	--	--	--	--
	III	--	16.7-19.5	--	--	--	--	--
	IV	--	13.9-16.7	--	--	--	--	--
Bigarreau Burlat.....	I	18.6-22.3	16.7-19.5	--	--	--	--	--
	II	13.0-22.3	9.3-19.5	16.7-22.3	--	--	--	--
	III	--	16.7-19.5	--	--	--	--	--
	IV	--	13.9-16.7	--	10.2-13.0	--	--	--
Bigarreau Reverchon....	I	--	--	--	--	--	--	--
	II	--	--	16.7-23.2	14.8-18.6	--	15.8-16.7	--
	III	--	--	13.9-16.7	--	--	--	--
	IV	--	--	--	13.9-15.8	--	--	--
Bigarreau Coeur de Pigeon.....	I	--	--	--	--	--	--	--
	II	--	--	13.9-23.2	9.3-13.0	13.0-14.8	13.9-19.5	16.7-20.4
	III	--	--	--	--	--	--	--
	IV	--	--	--	--	--	--	--
Bigarreau Napoleon.....	I	--	--	--	7.4-9.3	--	--	--
	II	--	--	11.1-12.1	7.0-7.4	7.0-7.4	9.3-10.2	--
	III	--	--	--	--	--	--	7.4-10.2
	IV	--	--	--	--	--	--	--

¹ Converted to U.S. currency on basis of 1 New Franc = 20.405 cents.

² I, In Department Pyrénées-Orientales. II, In Departments Bouches-du-Rhone and Vaucluse. III, In Department Gard. IV, In Rhone Valley.

Source: Marchés Européens des Fruits et Légumes, Paris.

Area II in 1963, where quotations varied as follows from week to week: June 6--13.9 to 23.2 cents, June 13--9.3 to 13.0 cents, June 20--13.0 to 14.8 cents, June 27--13.9 to 19.5 cents, and July 4--16.7 to 20.4 cents. No uniform seasonal trend is apparent; in some cases, prices declined as the season progressed; in others, they rose. Possibly, at times, poorer quality, in the last shipments offsets the tendency toward higher prices as supply grows short.

Napoleons are consistently the lowest-priced variety. Also, once they appear in volume, they are relatively stable in price. During the peak of the season prices ranged from 7.0 to 7.4 cents in Bouches-du-Rhone/Vaucluse in 1963 and from 7.4 to 9.7 cents in the same area in 1962. In Gard, in 1962 Napoleon prices opened at 9.3 to 10.2 cents but closed at 7.4 to 9.3 cents. Processors report they paid an average price of 7.4 cents per pound for Napoleons in 1962 and 7.0 cents in 1963. The lower price in 1963 was attributed to inferior quality.

According to the data of a cooperative of producers in this commercial region, the 5-year average (1956-60) of prices received by the producers were as follows, in cents per pound:

Hative de Bale (a very early Guigne).....	14.3
Bigarreau Moreau.....	13.9
Bigarreau Reverchon.....	13.2

Bigarreau Burlat	11.1
Bigarreau Jaboulay	9.6
Bigarreau de Juin	9.6
Bigarreau Napoleon	7.4

This average price for Napoleon is not very much different from prices prevailing during the flush period of the 1962 and 1963 seasons.

If the above prices are applied to average yields per tree here listed, then gross returns per tree of full-bearing age (and planted with generous spacing) would be as follows:

Reverchon	\$40.79
Hative de Bale	38.47
Jaboulay	27.94
Napoleon	27.74
Moreau	25.99
Bigarreau de Juin	19.49

With a spacing of 49 x 49 feet--previously mentioned as the most generous practiced--there would be but 18 trees per acre, with the above gross returns per tree bringing gross returns per acre as follows:

Reverchon	\$734.22
Hative de Bale	692.46
Jaboulay	502.92
Napoleon	499.50
Moreau	467.82
Bigarreau de Juin	350.82

However, net returns would not rank in the same order as above. Harvest labor costs are considerably larger for Hative de Bale and even for Jaboulay than for Napoleon. After harvest costs are deducted, net returns from Napoleon would rank about the same as for Hative de Bale and Jaboulay, and all these would be distinctly more profitable than Bigarreau de Juin and Moreau. Net returns for Napoleon would not be as far behind Reverchon's as would gross returns. One variety for which yield data were unavailable--Burlat--would probably surpass all other varieties in net returns, according to the Services Agricoles, because it bears regularly and produces high-quality fruit which commands a good price.

Data on costs are lacking. However, cash costs for most cherry orchards are probably minimal, involving only modest outlays for fertilizer and pesticides, since the numerous small groves operate exclusively with family labor. The cost of picking table varieties has been roughly estimated at 4 to 4-1/2 cents per pound.

Growers who spray their cherries against the cherry fly (i.e., those raising cherries to be processed for export to the United States) also receive a premium which covers cost of spraying. These payments are made to grower organizations that in turn distribute the money to the qualifying growers. In 1960, a sum of \$112,245 was in this way distributed to growers who had delivered almost 10 million pounds of "Bigarreau U.S.A." to processing plants in Apt. The premium was equivalent to 1-1/8 cents per pound.

Organization of Growers

The producers of Napoleon cherries are represented by the National Division of Growers of Bigarreau and Fruits for Processing. This is a so-called "groupment" i.e. grouping of growers of cherries and of other fruits for processing. In the three departments, Bouches-du-Rhone, Drome, and Vaucluse, nearly 50 syndicates or cooperatives, controlling 5,500 tons of Bigarreau, are members of the Section National. This grouping was created because of the "imperative necessities in selling a product".

In May 1958, a so-called "interprofessional" agreement was signed between the growers (National Division of Growers of Bigarreau and Fruits for Processing) and the processors of glacé fruit. This agreement, valid for 5 years and renewable, has governed relations between growers and processors. This agreement specified that because of formation of the Common Market and greater competition from preserved Italian cherries, it was absolutely essential for the French industry to make every effort to capture the U.S. market. Growers and processors, "recognizing that their interests are complementary", framed the interprofessional agreement on the following bases:

1. Assurance by the producers to the processors of availability of the entire production of sound cherries;
2. Assurance by the processors to the producers of the purchase of their entire production of sprayed cherries;
3. Endeavor to improve quality and to establish a "harmonious" plan for development of orchards and insect control.

Each syndicate or cooperative is made responsible by this agreement for delivery of sound fruit by its members who commit themselves to deliver a tonnage that is fixed each year. Prior to establishment of this tonnage every year, each locality estimates how much it expects to produce and indicates the quantity of cherries it will commit itself to deliver to the processors. These figures are then centralized by the National Division, which afterwards discusses with the processors the volume they will absorb, the minimum price to be set for the campaign--which corresponds to the growers' cost of production--and the amount of premium to be paid for spraying. All these elements--tonnage, minimum price, and premium--are established by an "interprofessional committee".

Among these functions, the individual syndicates or cooperatives have apparently succeeded most in carrying out their responsibility for spraying of cherries and distribution of the premium. This has even resulted in the use of cooperatively-owned equipment to carry out spraying, which is of course much more efficient than spraying that could be done by the individual operators on small farms.

The contract that the grower makes with his processor covers 10 years, though quantity and price are renegotiated each year. Processors complain that although they commit themselves to buy the growers' entire crop, the growers sometimes sell part to fresh fruit packers if the price for table cherries is high. The growers in turn have their criticisms. In 1961, M. Cuxac, President of the National Division of Growers of Bigarreau stated: "The

agreement exists. Like all marriages it is subject to its quarrels and reconciliations; but it has obliged the grower to prod his syndicate or cooperative organization the furthest possible to intervene".

The National Division has also emphasized a policy of developing a chain of storage cooperatives (presumably for the brined fruit) in order to continue to be "master of the product" and to more easily meet shifts of supply and demand.

II. GLACÉ CHERRIES

Production

Statistics are not available on production of glacé cherries in France. Only unofficial estimates, by the grower and processor segments of the industry, are available. It is not possible to check the accuracy of estimates of production, consumption, and stocks. However, exports, which account for the lion's share of production, should be ascertainable from official French statistics. Unfortunately, the French export category for glacé cherries also includes all drained candied fruit and candied peels and plants, so it is not possible to determine precisely how much of the category consists of glacé cherries. In France, the trade is in general agreement that the overwhelming bulk of the category is glacé cherries. Therefore in this report too exports of this category are considered roughly synonymous with exports of glace cherries, though up to 5 percent may be items other than cherries.

From interviews with members of the French cherry processing industry, it appears that the annual production of glacé cherries (i.e. the finished fruit) has ranged from 14,500 to 18,500 short tons in recent years, usually from 16,000 to 17,000 tons. Average production may be about 16,500 tons.

With a conversion factor of 1.5079³, about 25,000 tons of fresh cherries would be utilized to make 16,500 tons of finished fruit.

It is estimated that approximately 16,000 short tons of French Napoleons are brined and go into the making of glacé fruit. This represents 15 percent of French cherry production and possibly three-fourths of the production of Napoleons. In addition, there are imports from Italy of so-called "sulfurated" cherries--unpitted, unstemmed cherries in brine--available for processing. In the five years 1956-60, shipments of these Italian cherries into France averaged over 8,000 short tons annually or the equivalent of around 9,000 tons, fresh basis, with a conversion factor of 1.111³. (Interestingly, the figures for French imports of brined cherries are not separately shown in France's official import statistics but are obtainable from the official Italian export statistics.)

To summarize, therefore, 16,000 tons of French fruit (64 percent) and 9,000 tons of Italian fruit (36 percent)--in terms of fresh fruit basis--have

³ Edwards, John A. Special Report 164. Oregon State University, Corvallis, Oregon, October 1963.

Table 6.--ITALY: Exports of brined cherries by country of destination, averages 1953-57 and 1958-62, and annual 1952-1962

Year	France	Canada	U.K.	U.S.	Germany
	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>
Average:					
1953-57.....	12,687	6,116	4,651	2,909	480
1958-62.....	14,549	6,137	5,344	3,792	843
Annual:					
1952.....	3,277	4,422	3,887	3,326	--
1953.....	5,540	7,117	4,278	4,259	418
1954.....	11,549	5,580	4,750	2,348	493
1955.....	9,898	6,289	6,095	877	339
1956.....	27,285	7,548	4,788	3,710	668
1957.....	9,164	4,045	3,346	3,352	481
1958.....	20,430	4,117	4,440	2,719	2,319
1959.....	12,912	5,160	4,741	2,088	361
1960.....	10,815	7,342	5,966	6,756	169
1961 ³	22,356	8,356	5,953	5,209	---
1962 ³	6,235	5,709	5,620	2,186	1,366

Year	Denmark	Netherlands	Ireland	Switzerland	Other	Total
	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>
Average:						
1953-57.....	191	208	279	227	¹ 1,728	29,746
1958-62.....	236	139	262	111	² 4,302	35,715
Annual:						
1952.....	--	--	--	--	4,350	19,262
1953.....	147	168	304	126	1,205	23,562
1954.....	162	190	385	282	1,202	26,941
1955.....	209	548	294	251	1,642	26,442
1956.....	227	--	232	181	2,287	46,926
1957.....	208	134	181	293	2,303	23,507
1958.....	163	50	415	293	4,199	39,145
1959.....	282	268	219	129	2,421	28,581
1960.....	734	375	675	135	3,710	36,677
1961 ³	--	--	--	--	6,828	48,702
1962 ³	--	--	--	--	4,354	25,470

¹ Includes 218,000 pounds for Belgium-Luxembourg. ² Includes 202,000, 194,000 and 180,000 pounds for Sweden and 168,000, 49,000, and 137,000 pounds for Belgium-Luxembourg in 1958, 1959, and 1960 respectively. ³ Based on sum of unrevised monthly figures.

Source: Statistica Annuale Del Commercio Con L'Esterio, Rome.

been going into France's glacé cherry industry. These relative percentages are considered to represent a more or less "average" situation. However, when the French crop is short, imports from Italy may be considerably larger. In 1961, for example, when frost damage resulted in a short French crop of only 11,000 tons of Napoleons, Italy shipped about 11,200 tons of brined fruit, the equivalent of 12,400 tons of fresh cherries or more than half the fruit supply available to French processors. Similarly in 1958, there were heavy imports of Italian brined cherries in consequence of a poor French crop.

Most of the French glacé cherry pack is exported. Fragmentary information on the consumption within France indicates domestic sales of approximately 3,500 short tons annually.

Exports in the most recent 5 years for which statistics are available, 1958 through 1962, ranged from nearly 12,600 tons in 1958 to 14,900 tons in 1960.

Organization of Processing Industry

There are 12 processing plants that brine and glacé cherries in southeastern France. All are located in the town of Apt, in the department of Vaucluse. Apt, a town of 6,600 (1959 population) is 39 miles north of Marseilles and 30 miles directly east of Avignon. The number of processing firms has been fairly stable; there were 11 until 1956, when an additional one entered the business.

Originally, all processors were members of the "Syndicat des Confiseurs d'Apt." The syndicate acted as a central office for negotiating purchase of fruit from the growers and at times did the buying for all 12 processors. However, in 1959 and in 1960, some of the processors quit the syndicate and subsequently formed a new organization which became fully effective in 1962, entitled "Apt Union." In 1963, six processors were members. The Union claims that its processor members handle about 60 percent of the glacé cherries and 75 percent of all products processed by the 12 firms in Apt.

An outstanding feature of the Union is that member firms work much more closely together than has ever been characteristic in an industry noted for fierce competitiveness and secrecy of individual operations. These six firms have a uniform contract with growers that stipulates a minimum price. Also, the contract commits the processor to buy the entire quantity of cherries that the grower had estimated he would produce for brining. The grower in turn is obligated to turn over this entire quantity to the processor. Though the contract is for 10 years, price and quantity are renegotiated annually. The main purpose of the contract is to assure availability of adequate sound cherries for the U.S. and Canadian markets. The price also includes the premium for spraying. According to the Union, the six nonmember processors usually follow the price pattern set by the Union.

A major benefit to members forms has been collaboration in realigning processing activities to permit specialization by each firm. Thus, rather than all firms producing a complete line of items--such as candied melon rind cubes, lemon peel, orange peel, green glacé cherries, angelica, and

glacé cherries for certain markets, production of specific items has been assigned to the firm best suited to handle it. The six also exchange among themselves cherries to meet requirements of British and French buyers. They do not, however, exchange cherries among themselves for the American market, because U.S. buyers insist that individual processors maintain the identity of their fruit. Although the Union members have a common policy in buying, they operate independently in selling.

The Union also has a laboratory which gives technical assistance to the six member firms.

Processing Methods

Though representatives of French firms interviewed were hospitable and co-operative, the writer did not seek the type of information which individual firms might well consider private business information. Therefore he restricted himself to a few general questions and observations, rather than detailed information on equipment and techniques.

Cherries are usually available for brining by early June. They are kept in brine (sulfur dioxide) for at least 1 month, the minimum period depending on the nature of the cherry and the final product desired. The maximum period in brine is generally 1 year. Though the brined fruit may thus be stocked for a year or more, the glacé cherries are not stocked for an appreciable length of time. In July and August, processors may build up about a month's advance supply of glace fruit. Carryover of fruit glacé from the previous crop year is, therefore, negligible, not exceeding a few hundred tons to cover the first several weeks that the new crop is being brined.

As in U.S. processing, the brined fruit is pitted, stemmed, sorted and washed, then cooked and recooked in sugar solutions of increasing concentration. The process of making glacé cherries from the brined fruit takes about 20 days. The ultimate sugar concentration within the finished fruit approaches 80 percent. One source reported 75 to 77 percent sugar: in round numbers, 45 percent from corn syrup and 30 percent from sugar. The corn syrup is used, it is stated, not to reduce costs but to facilitate processing. The French glace industry often points out that the corn syrup is obtained from corn imported from the United States for that express purpose. U.S. certified color is also said to be imported from the United States and it is pointed out that these two products are used for the entire glacé pack, not just for that part which is exported to the United States.

Processors emphasize that their costs are highest for fruit going to the United States. The raw fruit itself is more expensive because of the spraying premium and also because only the best quality can be sold in the United States. Furthermore, risk of rejection by the U.S. Food and Drug Administration must be covered. It is far less difficult, the processors claim, to provide acceptable merchandise for the French, British or other foreign markets.

As an example, the Italian Napoleon-type cherries, upon which French processors normally depend for fully one-third of their supply of fruit, reportedly cannot be used for the U.S. market because they are not considered adequately free of maggots.

The price paid by French processors for Italian sulfurated cherries (unpitted and unstemmed) f.o.b. Italy averaged 9.7 cents per pound in 1962, 9.8 cents in 1961, 8.6 cents in 1960, 10.6 cents in 1959, and 10.6 cents in 1958.

Glacé cherries for export are packed in cardboard boxes containing 11 or 30 pounds; glacé cherries for the domestic market are packed in cardboard boxes of 12-1/8 pounds.

While the U.S. market requires a special grade, this is again divided into two grade categories, as are glacé cherries destined for other foreign markets. For export to the United States, the two grades are Fancy Whole and Fancy Whole and Broken, for other foreign markets, No. 1 Whole, and No. 1 Whole and Broken.

Labor Costs

In considering French wage rates, or labor costs, three points are noteworthy: (1) cash wages are much lower than in the United States; (2) wages have been increasingly rapidly; and (3) fringe benefits are of appreciable importance.

The Department of Vaucluse, where the cherries are processed, is in zone 3 (in terms of wage levels as shown in wage table). In this zone, the cash wage for men in April 1963 ranged from 44 cents per hour for common labor to 63 cents for highly skilled workers. For women, the pay ranged from 41 cents for common labor to 54 cents for skilled workers.

Table 7.--FRANCE: Average hourly wage rates in the food and agricultural products industries, April 1963, by wage zones¹

Category	Zone 1	Zone 2	Zone 3	Zone 4
	U.S. cents per hour ²	U.S. cents per hour ²	U.S. cents per hour ²	U.S. cents per hour ²
<u>Men:</u>				
Common laborer.....	50.2	45.3	44.1	41.2
Specialized laborer.....	53.5	48.6	46.7	44.1
Semiskilled worker.....	58.2	52.4	51.0	47.3
Skilled worker.....	66.9	57.5	56.5	51.6
Highly skilled worker.....	75.7	65.9	63.3	59.0
<u>Women:</u>				
Common laborer.....	46.5	41.6	41.4	39.4
Specialized laborer.....	49.2	44.3	44.7	41.8
Semiskilled worker.....	53.3	47.5	47.7	43.7
Skilled worker.....	58.4	51.2	53.7	46.9

¹ "Wage zones" indicates levels of wages. Different parts of the country occurring at random correspond to the various wage levels.

² Converted to U.S. currency on basis of 1 New Franc = 20.405 cents.

Source: Revue Francaise du Travail. April- June 1963, Ministry of Labor.

It should be pointed out that direct conversion into dollars of wages paid in foreign currencies can be misleading. Because prices of goods and especially services vary greatly among countries, it is not easy to tell what level of living a particular wage income will provide. The difficulty is all the greater since workers in different countries have very different preferences for many goods and services.

Furthermore, there are substantial supplemental benefits provided to wage earners in France, in the United States termed "fringe benefits." The additional cost to employers in the fruit and canning industries was estimated⁴ as equivalent to 50 percent of the hourly wage in the industry, in October 1962. (The U.S. Department of Commerce reported that for U.S. manufacturing industries, as an average, fringe benefits cost employers 16 percent -- in addition to wages -- in 1961.)

Some indication of the recent rapid rise of wages in France is provided by the following index⁵ of hourly rates for the agricultural products and food industries:

January 1, 1956	100
Average:	
1956	103.6
1957	111.6
1958	125.3
1959	133.8
1960	142.1
1961	151.3
January 1961	147.1
January 1962	157.7

In other words, hourly wages rose nearly 60 percent between January 1, 1956, and January 1962. It is also striking that the increase has continued unabated. Between January 1961 and January 1962 there was an increase of 7.2 percent (10.6 points), a greater rate than for any of the previous 3 years.

Although this section concerns itself primarily with labor rates in processing plants, a few figures on farm labor might be of interest.

It is apparent from these figures that the French farm labor pay scale is at a much lower level than the U.S. In 1961, top pay -- for supervisory level farm workers -- in France averaged about \$75 per month plus room and board, while ordinary farm workers (male) averaged \$42 plus room and board, and female farm help averaged \$36 per month. U.S. farm labor averaged \$151 per month plus room and board in 1961 (\$159 in 1963). In contrast, the French average for all farm labor was \$41 plus room and board in 1961.

There is a minimum guaranteed hourly pay scale for farm labor in France. In the agricultural area around Paris, the minimum has been as follows: October 1, 1960 -- 27.9 cents, December 1, 1961 -- 28.7 cents, and June 1, 1962 -- 29.4 cents. These are higher than prevail in some other parts

⁴ Institut National de la Statistique et des Etudes Economiques, November 1963.

⁵ Annuaire Statistique de la France, 1962.

Table 8.--FRANCE: Average monthly gross pay for farm workers, according to type of remuneration and type of worker, April 1961

Type of worker	Room and board	Room only	Board only	Neither room nor board
	<u>U.S. dol.¹</u>	<u>U.S. dol.¹</u>	<u>U.S. dol.¹</u>	<u>U.S. dol.¹</u>
Supervisor.....	² 75.41	102.39	--	² 97.54
Skilled and semiskilled male farm workers.....	59.29	78.09	61.31	78.90
Ordinary male farm workers...	41.96	64.86	49.48	71.78
Semiskilled and ordinary female workers.....	35.71	² 44.56	² 34.34	² 48.74
Young persons of 14 to 17 years and workers of reduced capabilities.....	21.61	² 39.40	² 27.32	² 41.71
All.....	40.63	72.95	49.40	73.01

¹ Converted to U.S. currency on basis of 1 new Franc = 20.405 U.S. cents.

² This figure is of questionable accuracy, according to source.

Source: Annuaire Statistique de la France, 1962.

of France; the lowest area scale for the same periods is calculated at 24.3, 25.1, and 25.7 cents, respectively. An index based on the minimum guaranteed hourly wage for farm labor shows a rapid increase, too, between 1956 and 1962, though not as rapid as for labor in processing plants. For the region around Paris, the index of minimum hourly farm pay is as follows:

April 1, 1956.....	100
August 1, 1957.....	105.9
January 1, 1958.....	110.5
March 1, 1958.....	114.9
June 1, 1958.....	118.4
February 1, 1959.....	123.8
November 1, 1959.....	127.2
October 1, 1960.....	130.1
December 1, 1961.....	133.9
June 1, 1962.....	137.2

This rapid rise in farm wage rates has spurred a movement toward greater efficiency in French agriculture. In these very years, a dynamic modernization of French agriculture has been set in full swing, and mechanization and rationalization of farming operations -- particularly in certain branches, as fruit growing--are proceeding at an unprecedented rate for French agriculture.

Prices

The average export price of shipments to all countries for French glacé cherries has been about 24 cents per pound, f.o.b. French port, in each of the last 3 years (1961-63). In 1961 and 1962, they averaged 23.9 cents each year. Complete data are not available for 1963 at this writing, but it appears that the price averaged near that of the previous 2 years.

Surprisingly, the average price of cherries (according to French export statistics) going to the United States has been less than for most countries, despite the added cost of the premium for spraying. However, the U.S. price was higher than that for the two other major markets -- the United Kingdom and Canada. Also the U.S. price -- 24.1 cents in 1961 and 24.0 cents in 1962 -- was higher than the average for French exports to all countries. The higher prices for some of the other markets may be attributable to small-volume transactions. As an example, shipments to undesignated countries, i.e., "other," are by far the highest priced and probably represent many small-volume sales.

Average French export prices are similarly available for earlier years. However, the French franc was devalued a number of times before 1961, which complicates the conversion of earlier prices in francs to meaningful U.S. prices, in addition to appreciable deviations in the free rate of exchange in those years.

However, it is possible to obtain average French export prices for a lengthy series of years by using U.S. import statistics. The latter, reported by the Bureau of the Census, U.S. Department of Commerce, show the quantity and the value (f.o.b. foreign port) of glacé cherries imported into the United States. Since the U.S. tariff duty is a compound one, i.e., 10 percent of the foreign value plus 7 cents per pound, U.S. Customs, in order to assess the duty, attempts to determine accurately the value of each shipment, which is subsequently published by the Bureau of the Census.

There is a difficulty, however, in that the U.S. tariff classification has included not only glacé cherries, but also maraschino, candied, crystallized, and otherwise prepared or preserved (including canned but not dried) cherries. It has always been assumed, though, that this category consisted preponderantly of glace cherries. In September 1963, the revised tariff schedules of the United States went into effect. The revised schedule separates finished cherries into two classes (1) "candied, crystallized, or glacé" and (2) "otherwise prepared or preserved" (except dried).

Data available for the last 4 months -- September through December -- of 1963 show that 71 percent of the finished cherry imports were of the glacé category while 29 percent were maraschino and/or canned. It is impossible to say whether this 4-month period is representative of the types of finished cherries usually imported. In any case, even if this large a proportion of non-glacé cherry imports were typical, it might not have too much bearing on the average foreign price calculated for previous years since the price difference, as determinable for the last 4 months of 1963, between glace cherries on one hand and maraschino/canned cherries on the other was

Table 9.--FRANCE: Volume, value, and price of exports of glace cherries¹, by destination, 1961 and 1962

Destination	1961			1962		
	1,000 pounds	1,000 U.S. dollars ²	U.S. cents per pound ^{2 3}	1,000 pounds	1,000 U.S. dollars ²	U.S. cents per pound ^{2 3}
United States.....	6,328	1,524	24.1	6,942	1,663	24.0
Belgium-Luxembourg....	276	69	25.0	311	81	26.0
Denmark.....	48	12	25.0	--	--	--
Germany, West.....	466	131	28.1	580	165	28.4
Ireland.....	476	110	23.1	533	127	23.8
Netherlands.....	135	34	25.2	220	55	25.0
Switzerland.....	507	105	20.7	450	98	21.8
United Kingdom.....	16,786	3,944	23.5	15,344	3,555	23.2
Algeria.....	311	79	25.4	117	42	35.9
Australia.....	134	32	23.9	183	46	25.1
Canada.....	1,466	350	23.9	1,623	388	23.9
Hong Kong.....	41	11	26.8	62	17	27.4
Japan.....	57	15	26.3	--	--	--
Kenya.....	--	--	--	40	11	27.5
Lebanon.....	--	--	--	46	11	23.9
Rhodesia, Federation of.....	61	16	26.2	64	18	28.1
Singapore.....	--	--	--	68	17	25.0
South Africa.....	687	170	24.7	977	241	24.7
Tunisia.....	--	--	--	48	14	29.2
Venezuela.....	249	62	24.9	104	28	26.9
Morocco.....	51	13	25.5	51	14	27.4
Other.....	439	125	28.5	326	110	33.7
Total.....	28,518	6,802	23.9	28,089	6,701	23.9

¹ Category officially designated as "Fruits, fruit peel, and plants preserved in sugar, drained."

² Value and price converted to U.S. currency on basis of 1 New Franc = 20.405 cents. ³ Average export price, f.o.b. French port, obtained by dividing the declared export value by the quantity shown.

Source: Statique du Commerce Exterieur de la France.

rather negligible. In that period, the price of maraschino and/or canned cherries averaged 25.74 cents per pound, or only 3 percent less than the 26.44-cent average for glacé cherries. Nor is this difference constant; in 2 of the 4 months the glace cherries were higher priced while in the 2 other months the reverse was true. Furthermore, there is strong evidence that there has been an error in classifying the imports under these two new categories and that virtually all of the imports -- probably over 90 percent -- are in fact glace cherries.

There is no perceptible trend in the price of French glacé cherries. The price for the most recent 5 years (1959-63) averaged 26.0 cents, for the previous 5 years (1954-58) 26.4 cents, and for the 4 years before that (1950-53), 25.4 cents. Exports in 1948 and 1949 were much higher priced -- 35.0 and 33.1 cents, respectively; but the volume was negligible as the reduction in the U.S. tariff duty had not yet had any impact. (A reduction in duty, granted to France, from 9.5 cents per pound and 20 percent ad valorem to 7.0 cents per pound and 10 percent ad valorem went into effect January 1, 1948.) The last 4 years, French average prices have been remarkably stable, ranging between 25.3 and 26.0 cents. These prices, though are higher than shown by French official statistics. Although all of these prices have been calculated on a f.o.b. basis, in actual practice French shippers quote on a c.i.f. New York basis. French prices have generally been lower than those of Italy. In the

1959-63 average period, Italian prices averaged 31.6 cents; in 1954-58, 33.7 cents; and for 1950-53, 37.6 cents. Of course, an exceptionally high price for 1 year in each of the average periods makes the average Italian price higher than for most of the individual years.

In order to be able to compare French prices with U.S. prices it is necessary to add the tariff duty, ocean freight, and insurance to the foreign price. This then gives a duty-paid price, New York. In the last 5 years (1959-63), the New York duty-paid price average 37.9 cents per pound and ranged between 37.1 and 39.4 cents. For the preceding 5 years, the average was 38.3 cents, and for 1950-53 it was 37.2 cents. Such price data have the limitation that, being averages of all qualities for each season, they do not show the actual prices by quality.

Wholesale prices are not published in the United States for either domestic or imported glacé cherries. Quotations are obtainable from the price lists of processors, importers, and brokers. There is a considerable range, however, at any one time in the prices quoted for domestic glacé cherries or for imported glacé cherries. These price disparities occur even within the same category; i.e., Fancy Whole Red, domestic or Fancy Whole Red, imported. Short of a thorough analysis of prices prevailing for various qualities, sizes, and packs of both domestic and imported glacé cherries sold in the U.S. market, it is not possible to make a meaningful comparison of wholesale price levels.

For a number of years, prices of French glacé cherries on the London market were published regularly by a British commercial paper. These prices include the tariff duty and the cross-channel freight. It is apparent that the landed duty-paid price of No. 1 Whole quality for the British market is considerably less than the average landed duty-paid price in the U.S. market.

Table 10.--UNITED STATES: Volume, value, and price of imports of finished cherries¹ from France and Italy, 1948-63

Year	France			Italy		
	<u>Pounds</u>	<u>U.S. dollars</u>	<u>U.S. cents per pound²</u>	<u>Pounds</u>	<u>U.S. dollars</u>	<u>U.S. cents per pound²</u>
1948.....	2,480	867	35.0	1,441	841	58.4
1949.....	744	246	33.1	2,485	1,331	53.6
1950.....	114,772	25,842	22.5	20,832	7,572	36.3
1951.....	1,117,347	301,910	27.3	46,318	12,945	27.9
1952.....	668,993	173,858	26.0	64,740	16,522	25.5
1953.....	1,582,547	405,611	25.6	1,077	655	60.8
1954.....	2,575,137	695,357	27.0	139,635	32,257	23.1
1955.....	3,043,145	797,228	26.2	36,629	10,330	28.2
1956.....	4,954,529	1,151,723	23.2	1,478	961	65.0
1957.....	5,609,389	1,515,721	27.0	228,842	54,308	23.7
1958.....	6,433,148	1,834,439	28.5	299,575	85,256	28.5
1959.....	5,931,137	1,626,903	27.4	342,100	94,140	27.5
1960.....	7,779,872	1,982,603	25.5	334,024	93,765	28.1
1961.....	5,898,145	1,533,555	26.0	427,354	116,482	27.3
1962.....	6,331,729	1,647,582	26.0	402,208	126,428	31.4
1963.....	7,969,588	2,012,908	25.3	279,582	122,656	43.9

¹ Category officially designated as "maraschino, candied, crystallized, glacé, prepared or preserved" (except dried, desiccated or evaporated).

² Average export price f.o.b. foreign port; obtained by dividing declared export value by the quantity shown.

Table 11.--UNITED STATES: Average f.o.b. and landed duty-paid prices of French glacé cherry imports 1948-63

Year	Price f.o.b. French port ¹	Duty-paid price, N.Y. ²
	<u>Cents per pound</u>	<u>Cents per pound</u>
1948.....	35.0	47.8
1949.....	33.1	45.7
1950.....	22.5	34.0
1951.....	27.3	39.3
1952.....	26.0	37.9
1953.....	25.6	37.5
1954.....	27.0	39.0
1955.....	26.2	38.1
1956.....	23.2	34.8
1957.....	27.0	39.0
1958.....	28.5	40.6
1959.....	27.4	39.4
1960.....	25.5	37.4
1961.....	26.0	37.9
1962.....	26.0	37.9
1963.....	25.3	37.1

¹ Calculated by dividing declared export value by the quantity declared.

² Calculated by adding duty (10% and 7¢ lb.) and estimated ocean freight (2.3¢ lb.) to f.o.b. price.

Table 12.--ENGLAND: Prices; No. 1 Whole French glacé cherries, London, first week of each month 1960-63

Month	Landed duty-paid, ex-wharf price ¹				Calculated c.i.f. price ²			
	1960	1961	1962	1963	1960	1961	1962	1963
	<u>U.S. cents per pound</u>	<u>U.S. cents per pound</u>	<u>U.S. cents per pound</u>	<u>U.S. cents per pound</u>	<u>U.S. cents per pound</u>	<u>U.S. cents per pound</u>	<u>U.S. cents per pound</u>	<u>U.S. cents per pound</u>
January....	31.5	--	34	30	26	--	28	25
February...	31-32	--	35	30	26-27	--	29	25
March.....	29	--	36	30	24	--	30	25
April.....	--	28-31	35-36	30-31	--	23-26	29-30	25-26
May.....	30	--	35	31	25	--	29	26
June.....	30	33	35	31	25	27	29	26
July.....	31	34	35	30.5	26	28	29	--
August.....	31	35	34	--	26	29	28	--
September..	31	35	33	--	26	29	27	--
October....	31	34	32-33	--	26	28	26.5-27	--
November...	--	34	--	--	26	28	--	--
December...	--	34	--	--	--	28	--	--

¹ Converted from British currency units at official rate of exchange. ² Derived by subtracting from the landed duty-paid price the tariff duty of 20 percent + 5/8 percent sugar duty, applicable before June 5, 1963.

. Source: Public Ledger, London.

Prices of French glacé cherries during 1963 showed little response to the astronomic increase in the world sugar price in 1963. A U.S. Tariff Commission⁶ report some years ago indicated that sugars and syrups accounted for 15 percent of the cost of producing glacé cherries in United States. Corn syrup however represents about 60 percent of the sugars and syrups used. Though world raw sugar prices in 1963 were more than double those of 1962, monthly average French f.o.b. export prices in 1963, as calculated from U.S. import statistics show a relatively insignificant price rise:

<u>Cents</u>		<u>Cents</u>	
January	25.4	July	25.4
February	24.4	August	24.0
March	24.2	September	25.1
April	24.6	October	26.3
May	24.6	November	25.9
June	25.1	December	26.2

Average import prices may, of course, conceal price changes caused by shifts in the qualities shipped, but even N.Y. importers' price lists for Fancy Whole glacé cherries show no higher prices in 1963 than in 1962. Corn syrup prices, incidentally, rose only 5 percent during 1963.

This raises the question as to the price that French processors are obliged to pay for sugar. Until about 1953, all French processors of food products were permitted to import sugar at world market prices, and without payment of duty, for re-export as part of the processed products. When France became a surplus sugar-producing country, the government obliged French processors to use French sugar in all food products, but they in turn were to receive a rebate amounting to the approximate difference between the world price and the French internal price, for sugar used in products exported. In 1956, for example, this drawback amounted to 4.5 cents per pound. As the world sugar price began to move up the drawback became progressively smaller. As its rise continued, the world price eventually equalled and then exceeded the French price. Therefore, according to French trade sources, drawback payments had completely ceased before 1963-crop glacé cherries were available.

Exports

French exports of glacé cherries, to all destinations, have expanded markedly over a decade. In the 1958-62 period, they averaged 27,610,000 pounds annually, an increase of 95 percent over the 14,169,000 pounds average exported annually in the 1949-52 period. After hitting a peak of 29,735,000 pounds in 1960 they tapered off a little in 1961 and 1962.

The most striking aspect of this 10-year expansion has been the increase in exports to the United States -- rising from 560,000 pounds in 1949-52 to

⁶ Glacé Cherries Report on Escape Clause Investigation Under Section 7 of the Trade Agreements Extension Act of 1951, U.S. Tariff Commission, October 1952.

Table 13.--FRANCE: Exports of fruits, fruit peel, and plants preserved in sugar, drained, averages 1949-52, 1953-57, and 1958-62, and annual 1949-62¹

Year	U.K.	U.S.	Canada	South Africa	Germany, W.
	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>
Average:					
1949-52.....	12,287	560	275	--	--
1953-57.....	15,059	3,733	632	412	--
1958-62.....	15,791	6,782	1,351	726	300
Annual:					
1949.....	11,289	--	--	--	--
1950.....	13,274	--	608	--	--
1951.....	14,710	1,268	--	--	--
1952.....	9,876	972	491	--	--
1953.....	12,068	1,776	664	313	--
1954.....	15,684	2,780	591	--	--
1955.....	16,483	3,271	856	595	--
1956.....	16,931	5,185	501	515	--
1957.....	14,129	5,651	550	634	--
1958.....	15,054	6,345	719	584	--
1959.....	15,274	6,441	1,440	799	--
1960.....	16,498	7,853	1,506	584	456
1961.....	16,786	6,328	1,466	687	466
1962.....	15,344	6,942	1,623	977	580

Year	Switzerland	Ireland	Belgium-Luxembourg	Algeria	Other	Total
	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>
Average:						
1949-52.....	--	--	--	57	990	14,169
1953-57.....	--	223	--	172	1,448	21,679
1958-62.....	345	479	176	228	1,432	27,610
Annual:						
1949.....	--	--	--	--	679	11,968
1950.....	--	--	--	--	1,068	14,950
1951.....	--	--	--	--	1,363	17,341
1952.....	--	--	--	227	852	12,418
1953.....	--	--	--	--	1,124	15,945
1954.....	--	--	--	--	1,876	20,931
1955.....	--	676	--	343	1,336	23,560
1956.....	--	--	--	254	1,539	24,925
1957.....	--	438	--	264	1,366	23,034
1958.....	328	537	--	381	1,213	25,161
1959.....	--	451	--	--	2,141	26,546
1960.....	438	399	292	331	1,378	29,735
1961.....	507	476	276	311	1,215	28,518
1962.....	450	533	311	117	1,212	28,089

¹ Consists very largely of glacé cherries.

Source: Statistique du Commerce Extérieur de la France.

Table 14.--UNITED STATES: Imports of finished cherries¹ by countries of origin, average 1952-56², annual 1956-57 to 1962-63³

Country of origin	Average 1952-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
France.....	2,688.8	5,558.7	5,678.9	6,106.0	7,122.9	6,216.0	5,838.8	7,410.5
Italy.....	50.4	46.4	190.4	332.4	423.2	217.2	652.9	278.0
Other European countries...	⁴ 5.9	--	--	⁵ 152.4	6.7	⁶ 19.5	10.6	9.7
Other countries.....	1.1	--	--	⁷ 4.2	--	--	1.4	.9
Total.....	2,746.2	5,605.1	5,869.3	6,595.0	7,552.8	6,506.7	6,503.7	7,699.1

¹ Category officially designated as "maraschino, candied, crystallized, glacé, prepared or preserved" (except dried, desiccated or evaporated). ² Five-year average of calendar years. ³ Marketing years beginning July 1. ⁴ Includes 4,621 pounds from Belgium-Luxembourg. ⁵ Includes 116,903 pounds from Denmark, 2,799 pounds from Switzerland, and 33,189 pounds from Spain. ⁶ 14,155 pounds from Spain. ⁷ Japan.

Source: Bureau of the Census, U.S. Department of Commerce.

6,782,000 pounds in 1958-62. A peak of 7,853,000 pounds was attained in 1960. U.S. import statistics, however, show a new high of 7,970,000 pounds in 1963.

Shipments to destinations other than the United States rose from 13,609,000 pounds to 20,828,000 pounds, an increase of 53 percent, between 1949-52 and 1958-62. The United Kingdom is far the largest market for glacé cherries, taking an average of 15,791,000 pounds, or well over twice as much as the United States. The British market, too, has shown considerable expansion; but most of its growth took place in the first 5 years of the decade.

Canada is the third most important outlet for French cherries, though of considerably less importance than the United Kingdom and the United States. In summary, the United Kingdom has been a market for 57 percent of France's exports, the United States for 25 percent, and Canada for 5 percent, with a number of other countries together accounting for the remaining 13 percent. Also, the rate of growth has definitely slowed.

One reason for a slowing in the expansion may be the somewhat greater competition offered by other exporting countries, particularly Italy. In the absence of statistics on exports of finished cherries from other countries, some indication of this is provided by U.S. import statistics. In the 5-year period, 1952-56, an average of 97.9 percent of U.S. imports of finished cherries came from France; only 57,400 pounds from other countries. In the most recent 5 marketing seasons, France's share ranged from a high of 96.3 percent in 1962-63 to a low of 89.8 percent in 1961-62. In the latter season, countries other than France supplied 664,900 pounds, Italy nearly all. Spain has also become a supplier, but of only negligible quantities.

Outlook

On an attempt to look into the future--difficult enough with adequate

statistics for the past and present--it appears that France will be offering larger quantities of glacé cherries for export.

Production should continue to increase -- mainly because of expanding acreage. The extent of new plantings is not known but that it is taking place can be borne out by the limited statistics available and by the judgment of French specialists. The Ministry of Agriculture has estimated that French cherry production -- of all varieties -- will increase from a "potential" of 116,000 tons in 1959 (actual crop 89,000) to a "potential" of 138,000 tons in 1965. This would present a 19-percent rise. With the 1963 crop having approximated 119,000 tons, an additional 19,000 tons will be forthcoming if this forecast is valid. It is also likely that some further increase will occur after 1965. There is no information as to the proportions of different varieties in the new plantings.

There are some indications that Napoleons are sharing in this expansion. Of course, not knowing how many Napoleons were produced in the past makes it all the more difficult to estimate future output. If we accept one French informed source's estimate that average production of Napoleons has been 22,000 tons, and if we assume also that they are increasing at the same rate as the entire cherry crop; i.e., 19 percent, then the "potential" 1965 Napoleon crop would approximate 26,000 tons.

Not all of this increase would be caused by expanded plantings. Some of the gain should also result from higher yields per acre, even if only slight, by virtue of more widespread application of insecticides and fungicides, and fertilizer, and by other improved management practices.

With population growth and a rising standard of living, there should be some increase within France in consumption of cherries -- in both fresh and processed forms. However, the highly colored varieties rather than the Napoleons would be the main benefactors of an expanded market for fresh fruit. Though some expansion of consumption of processed cherries should take place it is unlikely to involve any large additional quantity. An increase by 1970 of, for instance, 20 percent in consumption of processed cherries would require only an additional 700 tons of glacé cherries and a similar quantity of other processed cherries. The bulk of increased production, even after allowing for increased domestic fresh sales, would have to go into export -- as glacé fruit.

There is, of course, the possibility that France's imports of Italian sulfurated cherries would decline as French production increased and that one trend would therefore offset the other. It seems likelier, though, that the import volume of Italian cherries will be maintained, at least. From the Italian side, the rapidly increasing production in Italy makes it improbable that the demand from other markets will make inroads on the shipments to France. From the side of the French processors, it is desired to maintain the imports from Italy, both as a source of large emergency imports in the event of a French crop failure, and as a continuing source of tonnage in addition to enlarged French supplies so as to be able to expand export sales.

It may well be that upwards of 3,000 tons additional cherries (fresh basis) would be available for glacé fruit for export in the next few years over

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amounts available till now. This would mean at least 2,000 more tons of glacé cherries for export. To which countries would these cherries move? The most reasonable answer to this question is provided by the present pattern and trend of export of French glacé cherries.

Will French glacé cherries continue to be as keenly competitive as they have been in comparison with the other major producer of glacé cherries -- the United States? Figures cited in the Tariff Commission Report⁷ indicate that the cost of the brined cherries accounted for over 50 percent of the cost of producing glacé cherries. The cost of producing brined cherries consists largely of the cost of the fruit, approximately 70 percent. Labor makes up an important part of the remainder.

Obviously, the French glacé industry has enjoyed a substantial advantage in cost of both fruit and labor. Even with a premium of about 1 cent per pound for fly-spraying, the French grower received only about half as much as the 16.2 cents per pound that the Oregon grower averaged for cherries for brining in the 1956-60 period. (Michigan growers received 11.8 cents in the 1957-61 period.) In view of the substantial increases indicated for cherry production in France, and the even greater increases in the production of other deciduous fruits, there is every prospect of the supply growing faster than demand so that we can expect more, rather than less, pressure on French fruit prices. Though the Common Market may improve the access of French fruit to the markets of its partners, the sharp increases in production of cherries, and even more so other deciduous fruits, in the rest of the Common Market, do not lead to any optimistic outlook for prices.

As for labor costs, admittedly French wages are rising at a faster rate than U.S. wages; but with French levels approximately half those of the United States, it is likely that even with narrowing of the difference, a considerable disparity will exist for many years. Also technological advances in France both in fruit culture and processing will raise the productivity of French labor.

⁷ C.i.f. U.S. Tariff Commission Report, October 1952.

